

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing: 08 February 2001 (08.02.01)	
International application No.: PCT/US00/20991	Applicant's or agent's file reference: 7696M/VB
International filing date: 02 August 2000 (02.08.00)	Priority date: 03 August 1999 (03.08.99)
Applicant: AOUAD, Yousef, Georges et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International preliminary Examining Authority on:16 October 2000 (16.10.00)☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer:</p> <p>J. Zahra</p> <p>Telephone No.: (41-22) 338.83.38</p>
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PATENT COOPERATION TREATY


PCT

REC'D 09 JUL 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 7696M/VB		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) FOR FURTHER ACTION	
International application No. PCT/US00/20991	International filing date (day/month/year) 02/08/2000	Priority date (day/month/year) 03/08/1999	
International Patent Classification (IPC) or national classification and IPC C11D17/00			
Applicant THE PROCTER & GAMBLE COMPANY			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 11 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none">I <input checked="" type="checkbox"/> Basis of the reportII <input type="checkbox"/> PriorityIII <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicabilityIV <input checked="" type="checkbox"/> Lack of unity of inventionV <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statementVI <input type="checkbox"/> Certain documents citedVII <input checked="" type="checkbox"/> Certain defects in the international applicationVIII <input checked="" type="checkbox"/> Certain observations on the international application			
Date of submission of the demand 16/10/2000		Date of completion of this report 05.07.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Diebold, A Telephone No. +49 89 2399 8442	



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/20991

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-21 as originally filed

Claims, No.:

1-19 as originally filed

Drawings, sheets:

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

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☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 16-19.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 16-19.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

☐ restricted the claims.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/20991

- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.
- 2. ☒ This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
- 3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
 - ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
- 4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
 - ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-15.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-15
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-15
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-15
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/US00/2099**

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Item III:

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability.

The questions whether the claimed invention appears to be novel, to involve an inventive step, or to be industrially applicable have not been and will not be examined in respect of claims 16-19.

Indeed, the Applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The Applicant is advised that the EPO policy, when acting as an International Preliminary Examining Authority, is normally not to carry out a preliminary examination on matter which has not been searched.

The required additional search fees have not been timely paid by the Applicant, and consequently, this international preliminary examination report is restricted to the invention covered by claims 1-15, on which a partial international search has been carried out.

Item IV:

Lack of unity of invention

- 1) The international examining authority considers that the requirement of unity of invention (Rule 13.1 to 13.3 PCT) is not complied with for the following reasons:

Multiple groups of inventions have been found in the present international application.

1. Claims 1-15

A process for preparing a solvent-based surfactant paste comprising the steps of:
A) forming an aqueous surfactant mixture by blending a mixture of anionic sulfonated surfactant, organic solvent and chelant and where the aqueous surfactant mixture has a specific water content and is a non-Newtonian fluid;
B) drying the aqueous surfactant mixture under vacuum to form the solvent-based surfactant paste having a water content of less than 1% and which is in the form of a Newtonian fluid with a constant viscosity within a specific range.

2. Claim 16

A process for drying detergent ingredients comprising the steps of:

- A) forming an aqueous detergent ingredient mixture by blending;
- B) drying the aqueous detergent ingredient mixture using an Agitated Thin Film Evaporator (ATFE).

3. Claim 17

A process for converting Newtonian liquids into non-Newtonian liquids comprising the steps of:

- A) forming an aqueous Newtonian liquid mixture;
- B) drying said mixture using an ATFE such that a non-Newtonian liquid is produced.

4. Claim 18

A process for converting non-Newtonian liquids into Newtonian liquids comprising the steps of:

- A) forming an aqueous non-Newtonian liquid mixture;
- B) drying said mixture using an ATFE such that a Newtonian liquid is produced.

5. Claim 19

A process for preparing anhydrous agglomerate comprising the steps of:

- A) producing a binder;
- B) drying said binder using an ATFE; and
- C) combining said dried binder with powders such that an agglomerate is produced.

These multiple inventions are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

Lack of unity a posteriori in view of the article "Applications for ATFEs - drying and concentration" (The Chemical Engineer, 15 November 1990, pages 33-38).

The general problem underlying the present application is the production of anhydrous (non-aqueous) liquid laundry detergent products that have a high degree of chemical and physical stability. The common concept to all the present claims for solving the afore mentioned problem is the drying under vacuum using an evaporator, preferably an Agitated Thin Film Evaporator.

However, this common concept is known from the article "Applications for ATFEs -

drying and concentration" (The Chemical Engineer, 15 November 1990, pages 33-38), which discloses the use of ATFES for drying materials. Consequently, the common concept of the present application is not novel in view of the available prior art.

Moreover, no further common technical feature, which could be regarded as a special technical feature involved in the technical relationship among the different inventions (in the sense of Rule 13.2 PCT), can be seen in the present application.

Thus, since the general concept is not novel, it appears that these multiple (groups of) inventions are not so linked as to form a single general inventive concept as required by Rule 13.1 PCT, and hence, the present set of claims is not unitary.

Item V:

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.

- 1) Reference is made to the following documents D1-D4:

D1 = WO-A-98/00518

D2 = WO-A-98/00516

D3 = WO-A-92/09678

D4 = XP-000965528

- 2) The present claims 1-15 meet the novelty requirement under Article 33(2) PCT, because no prior art of record teaches the invention as presently claimed.

Indeed, in the present application, the drying of (removing water from) aqueous detergent mixtures is performed under vacuum using an evaporator, preferably an Agitated Thin Film Evaporator, whereas in the documents D1-D3, the drying of the hydrated or hydratable particulate components is performed using a fluidized bed drying procedure or by adding an anhydrous material which absorbs water.

- 3) The present claims 1-15 are considered as involving an inventive step under Article 33(3) PCT for the following reasons:

D1 pertains to a process for preparing chemically stable non-aqueous liquid heavy-duty detergent compositions comprising the steps of (a) forming a liquid base comprising non-aqueous organic diluent(s); (b) providing hydrated/hydratable particulate components selected from anionic surfactants, peroxygen bleaching agents, bleach activators, organic detergent builders and inorganic alkalinity sources, the components have an initial unbound moisture content of 0.5 wt% or greater; (c) drying the hydrated/hydratable components using a fluidised bed drying procedure to reduce the free, unbound moisture content to a level of less than 0.5 wt%; and immediately (d) combining the dried hydrated/hydratable components with the liquid base. The compositions have a high degree of chemical, i.e. bleach and enzyme, stability along with commercially acceptable phase stability, pourability and cleaning, bleaching or laundering performance.

D2 relates to the preparation of a non-aqueous liquid detergent composition in the form of a suspension of solid insoluble particulate material dispersed throughout a structured, surfactant-containing liquid phase. The process comprises (a) forming an aqueous slurry containing alkali metal salt(s) of linear C₁₀₋₁₆ alkylbenzene sulphonic acid and dissolved non-surfactant salt(s); (b) drying the slurry to a solid material containing 0.5-4 wt.% water; (c) adding, in particulate form, the solid obtained to an agitated liquid medium comprising non-aqueous organic diluents to form a structured, surfactant-containing liquid phase; and (d) subjecting the liquid phase formed to milling or high shear agitation to increase the yield value of the liquid phase to a level of 1-8 Pa.

D3 teaches a liquid built detergent composition comprising a substantially anhydrous organic liquid phase comprising a water-miscible organic solvent having uniformly distributed therein a nonionic surfactant and an alkali metal salt of an anionic surfactant acid which contains one or more sulphonic acid groups, said organic phase having dispersed therein a finely divided particulate builder. In order to retain the substantially non-aqueous nature of the composition, said builder is added in the form of an anhydrous material to absorb the water present or formed in the composition.

D4 deals with concentration and drying of food products and other viscous materials using Agitated Thin Film Evaporators. It is mentioned that some heat-sensitive materials dissolved or suspended in water or organic solvents can be dried in an ATFE to leave a free-flowing solid product. The ATFE is an efficient system for drying from a highly fluid starting material to a product with a low, accurately-controlled

moisture level in a single pass.

Consequently, none of the cited documents teaches, nor even suggests a process for preparing a solvent-based surfactant paste having a low water content and which is in the form of a Newtonian fluid, comprising a step of drying under vacuum using an evaporator, preferably an Agitated Thin Film Evaporator. Accordingly, the claims 1-15 comply with the inventive step requirement under Article 33(3) PCT, because none of the references suggests the advantages shown for the compositions and method presently claimed.

- 4) The claims 1-15 meet the requirement under Article 33(4) PCT, because the present invention is industrially applicable in the field of detergents.

Item VII:

Certain defects in the international application.

The following defects in the form or contents of the international application have been noted:

The units of measure "ft²", weight "lb" and temperature "°F" employed on pages 15 to 21 are not additionally expressed in terms of the units stipulated by Rule 10.1/(a) and (b) PCT.

Item VIII:

Certain observations on the international application.

The following observations on the clarity of the claims, description and drawings or on the question whether the claims are fully supported by the description, are made:

- 1) In claims 1, 2, 4-6, 8, 9, 12, 14 and 15 of the present application and the corresponding parts of the description, the vague term "about" when used in combination with numerical values causes lack of clarity and should therefore be avoided (Article 6 PCT, Guidelines C-III, 4.5a PCT).

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EXAMINATION REPORT - SEPARATE SHEET**

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- 2) The hereinafter mentioned features of claims 1-6 and 8-12 are not referred to in the description. These claims are therefore not supported by the description as required by Article 6 PCT.

Claim 1: "aqueous surfactant mixture has a water content of 5% **to 80%** by weight".

Claim 2: "comprise **from 0.001% to 40%** of other additives".

Claims 3, 4 and 10: the whole claims.

Claim 5: "blending **from 0.001% to 40%** of other additives".

Claims 6 and 12: "alkylene glycols, glycol monobutyl ether, monoethylethers, mono-methylethers, monopropylethers and monobutylethers of propoxy propanol".

Claim 8: "neutralized mixture has a water content of from 5% **to 50%** by weight".

Claim 9: "has a water content of from 5% to 50% by weight of the neutralized mixture".

Claim 11: "alkyl ethoxy sulphonic acid, alkyl polyalkoxylate sulphonic acid, alkyl sulphonic acid".

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 7696M/VB	FOR FURTHER ACTION <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. PCT/US 00/ 20991	International filing date (<i>day/month/year</i>) 02/08/2000	(Earliest) Priority Date (<i>day/month/year</i>) 03/08/1999
Applicant THE PROCTER & GAMBLE COMPANY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

—
☐ None of the figures.

INTERNATIO SEARCH REPORT

International application No.
PCT/US 00/20991

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-15

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-15

a process for preparing a solvent-based surfactant paste comprising the following steps :

A) forming an aqueous surfactant mixture by blending a mixture of anionic sulfonated surfactant, organic solvent and chelant and where the aqueous surfactant mixture is a non-Newtonian fluid.

B) drying the aqueous surfactant mixture under vacuum to form the solvent-based surfactant paste having a water content of less than 1 % and which is in the form of a Newtonian fluid.

2. Claim : 16

a process for drying detergent ingredients comprising the steps of:

A) forming an aqueous detergent ingredient mixture by blending

B) drying the aqueous detergent ingredient mixture using an Agitated Thin Film Evaporator ATFE)

3. Claim : 17

a process for converting Newtonian liquids into non-Newtonian liquids comprising the steps of:

A) forming an aqueous Newtonian liquid mixture

B) drying said mixture using an ATFE such that a non-Newtonian liquid is produced

4. Claim : 18

a process for converting non-Newtonian liquids into Newtonian liquids comprising the steps of:

A) forming an aqueous non-Newtonian liquid mixture

B) drying said mixture using an ATFE such that a Newtonian liquid is produced

5. Claim : 19

a process for preparing anhydrous detergent agglomerates comprising the steps of:

A) producing a binder

B) drying said binder using an ATFE

C) combining said dried binder with powders such that an

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

agglomerate is produced.

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IPC 7 C11D17/00 C11D3/43 C11D3/20 C11D11/00

IPC 7 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	✓ WO 98 00518 A (PROCTER & GAMBLE) 8 January 1998 (1998-01-08) claims; examples ---	1,2,5
A	✓ WO 98 00516 A (PROCTER & GAMBLE) 8 January 1998 (1998-01-08) claims; examples ---	1,2,5
A	✓ WO 92 09678 A (S B CHEMICALS LIMITED) 11 June 1992 (1992-06-11) claims; examples ---	8,9,11, 12
A	✓ US 3 981 826 A (MUNRO HAMISH DAVID) 21 September 1976 (1976-09-21) example 1 ---	8

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☒ Patent family members are listed in annex.

"&" document member of the same patent family

10. 04. 2001

GRITTERN, A

INTERNATIONAL SEARCH REPORT

International Application No

US 00/20991

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>✓ TYZACK J: "APPLICATIONS FOR ATFES-DRYING AND CONCENTRATION" CHEMICAL ENGINEERING, MCGRAW-HILL, ALBANY, NY, US, no. 485, 15 November 1990 (1990-11-15), pages 33, 35, 37-38, XP000965528 ISSN: 0009-2460</p> <p>-----</p>	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

US 00/20991

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9800518	A	08-01-1998	BR 9710068 A CA 2258993 A EP 0907716 A JP 11514030 T	10-08-1999 08-01-1998 14-04-1999 30-11-1999
WO 9800516	A	08-01-1998	BR 9710079 A CA 2258509 A EP 0907714 A JP 11514028 T	10-08-1999 08-01-1998 14-04-1999 30-11-1999
WO 9209678	A	11-06-1992	AU 9028391 A CA 2096956 A EP 0559703 A IE 914109 A JP 6502663 T NZ 240754 A PT 99611 A ZA 9109332 A	25-06-1992 27-05-1992 15-09-1993 03-06-1992 24-03-1994 26-05-1995 30-10-1992 30-09-1992
US 3981826	A	21-09-1976	GB 1370377 A CA 982011 A DE 2255509 A FR 2161963 A NL 7215386 A,B, BE 791366 A ES 408365 A IE 36836 B IT 970497 B	16-10-1974 20-01-1976 30-05-1973 13-07-1973 17-05-1973 14-05-1973 16-11-1975 02-03-1977 10-04-1974

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 February 2001 (08.02.2001)

PCT

(10) International Publication Number
WO 01/09273 A3

- (51) International Patent Classification⁷: **C11D 17/00**, 3/43, 3/20, 11/00
- (21) International Application Number: **PCT/US00/20991**
- (22) International Filing Date: **2 August 2000 (02.08.2000)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
60/146,954 3 August 1999 (03.08.1999) **US**
- (71) Applicant (*for all designated States except US*): **THE PROCTER & GAMBLE COMPANY [US/US]**; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **AOUAD, Yousef, Georges [US/US]**; 6394 Grand Vista Avenue, Cincinnati, OH 45213 (US). **DELGADO, Rodolfo [US/US]**; 10023 Bolingbrooke Drive, Cincinnati, OH 45241 (US). **BAKKEN, Andrew, Peter [US/US]**; 3608 N. Winterset Drive, Appleton, Wisconsin 54911 (US).
- (74) Agents: **REED, T., David et al.**; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).
- (81) Designated States (*national*): **AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR (utility model), KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**
- (84) Designated States (*regional*): **ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).**
- Published:**
— *with international search report*
- (88) Date of publication of the international search report:
13 September 2001
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **A PROCESS FOR MAKING DETERGENT COMPOSITIONS WITH ADDITIVES**

(57) Abstract: Process incorporating an organic solvent and being composed of detergent components present together within specific ranges have now been found so as to produce a non-aqueous liquid detergent composition without the attendant drawbacks of non-aqueous liquids. In particular, this process produces a liquid detergent composition which is easy to handle in bulk, has excellent long-term stability and is readily soluble in a wash liquor.

WO 01/09273 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/20991

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C11D17/00 C11D3/43 C11D3/20 C11D11/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98 00518 A (PROCTER & GAMBLE) 8 January 1998 (1998-01-08) claims; examples ---	1,2,5
A	WO 98 00516 A (PROCTER & GAMBLE) 8 January 1998 (1998-01-08) claims; examples ---	1,2,5
A	WO 92 09678 A (S B CHEMICALS LIMITED) 11 June 1992 (1992-06-11) claims; examples ---	8,9,11, 12
A	US 3 981 826 A (MUNRO HAMISH DAVID) 21 September 1976 (1976-09-21) example 1 --- -/--	8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"P" document published prior to the international filing date but later than the priority date claimed

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Date of the actual completion of the international search

15 January 2001

Date of mailing of the international search report

10. 04. 2001

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GRITTERN, A

INTERNATIONAL SEARCH REPORT

I. International Application No

PCT/US 00/20991

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>TYZACK J: "APPLICATIONS FOR ATFES-DRYING AND CONCENTRATION" CHEMICAL ENGINEERING, MCGRAW-HILL, ALBANY, NY, US, no. 485, 15 November 1990 (1990-11-15), pages 33, 35, 37-38, XP000965528 ISSN: 0009-2460</p> <p>-----</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 00/20991

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-15

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-15

a process for preparing a solvent-based surfactant paste comprising the following steps :

A) forming an aqueous surfactant mixture by blending a mixture of anionic sulfonated surfactant, organic solvent and chelant and where the aqueous surfactant mixture is a non-Newtonian fluid.

B) drying the aqueous surfactant mixture under vacuum to form the solvent-based surfactant paste having a water content of less than 1 % and which is in the form of a Newtonian fluid.

2. Claim : 16

a process for drying detergent ingredients comprising the steps of:

A) forming an aqueous detergent ingredient mixture by blending

B) drying the aqueous detergent ingredient mixture using an Agitated Thin Film Evaporator ATFE)

3. Claim : 17

a process for converting Newtonian liquids into non-Newtonian liquids comprising the steps of:

A) forming an aqueous Newtonian liquid mixture

B) drying said mixture using an ATFE such that a non-Newtonian liquid is produced

4. Claim : 18

a process for converting non-Newtonian liquids into Newtonian liquids comprising the steps of:

A) forming an aqueous non-Newtonian liquid mixture

B) drying said mixture using an ATFE such that a Newtonian liquid is produced

5. Claim : 19

a process for preparing anhydrous detergent agglomerates comprising the steps of:

A) producing a binder

B) drying said binder using an ATFE

C) combining said dried binder with powders such that an

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

agglomerate is produced.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/20991

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9800518 A	08-01-1998	BR 9710068 A CA 2258993 A EP 0907716 A JP 11514030 T	10-08-1999 08-01-1998 14-04-1999 30-11-1999
WO 9800516 A	08-01-1998	BR 9710079 A CA 2258509 A EP 0907714 A JP 11514028 T	10-08-1999 08-01-1998 14-04-1999 30-11-1999
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patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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